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5 CONTROL OF BRAKE-AND STEER-BY-WIRE
SYSTEMS DURING BRAKE FAILURE

10 ABSTRACT OF THE DISCLOSURE

A method, computer usable medium including a program, and a system for
braking a vehicle during brake failure. The method and computer usable medium include
the steps of determining a brake force lost corresponding to a failed brake, and
determining a brake force reserve corresponding to at least one non-failed brake. At least
15 one command brake force is determined based on the brake force lost and the brake force
reserve. The at least one command brake force is applied to the at least one non-failed
brake wherein at least one of an undesired yaw moment and a yaw moment rate of
change are limited to predetermined values. A steering correction may be determined
and applied to counter a yaw moment generated from asymmetric braking based on a
20 predetermined limit. The system includes a plurality of brake assemblies wherein a
command brake force is applied to at least one non-failed brake. A controller operably
attached to the brake assemblies includes means for determining brake force lost, brake
force reserve, and the command force.